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ABSTRACT

This study assessed the relative value of Bandura's (1977, 1982, 1986) self-efficacy theory and Rotter's (1966) locus of control model in predicting the career maturity of college students. A sample of 113 undergraduates (83 women and 30 men) completed a demographics questionnaire and measures of career decision-making (CDM) self-efficacy (Taylor & Betz, 1983), career locus of control (Trice, Haire, & Elliott, 1989), CDM attitudes (Crites, 1978a), and CDM skills (Super, Thompson, Lindeman, Jordaan, & Myers, 1981). Results reveal that self-efficacy theory is superior to the locus of control model in predicting the CDM attitudes of college students. Results also showed that the most powerful predictor of CDM skills among college students was their CDM attitudes. Locus of control accounted for additional variance in the CDM attitudes of the participants. Age did not enter either of the regression equations despite its significant correlation with CDM attitudes and CDM skills. (Contains 43 references and 3 data tables.) (Author/YLB)

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Assessing the Value of Social-Cognitive Constructs in Career Development

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Abstract

This study assessed the relative value of Bandura's (1977, 1982, 1986) self-efficacy theory and Rotter's (1966) locus of control model in predicting the career maturity of college students. One hundred thirteen undergraduates (83 women and 30 men) completed a demographics questionnaire and measures of career decision-making (CDM) self-efficacy (Taylor & Betz, 1983), career locus of control (Trice, Haire, & Elliott, 1989), CDM attitudes (Crites, 1978a), and CDM skills (Super, Thompson, Lindeman, Jordaan, & Myers, 1981). Results reveal that self-efficacy theory is superior to the locus of control model in predicting the CDM attitudes of college students. Theoretical and practical implications of the findings are discussed.

Assessing the Value of Social-Cognitive Constructs in Career Development

One of the most commonly researched aspects of career development is career maturity, defined as the readiness of an individual to make informed, age-appropriate career decisions and cope with career development tasks (King, 1990; Savickas, 1984). Crites's (1965, 1971) career maturity model, in particular, has received substantial empirical attention since its inception.

Crites's (1965, 1971) model includes both affective and cognitive dimensions. The affective dimension of career maturity is represented by attitudes toward career decision making, whereas the cognitive dimension is represented by career choice competencies. Crites (1971) defined attitudes as dispositional response tendencies distinct from abilities and interests. Attitudes are expectations that influence interpretation of career events and affect the accomplishment of career developmental tasks (Healy, O'Shea, & Crook, 1985). Career choice competencies, on the other hand, refer to specific career decision-making (CDM) problem-solving skills. Research evidence indicates, as Crites (1971) hypothesized, that career maturity during the exploratory stage of career development (which includes the college years) comprises distinctive cognitive and affective components (Healy, 1991; Jepsen & Prediger, 1981).

Researchers have discovered significant, positive relationships between career maturity and a number of

characteristics associated with effective career development, including scholastic achievement (Healy et al., 1985), self-esteem (Khan & Alvi, 1983), and a variety of other career development competencies (Gasper & Omvig, 1976). Career maturity also appears to be associated with the age and gender of college students. Older students tend to possess more mature attitudes toward career decision making and exhibit greater skill at actually making career decisions (Healy et al., 1985; Healy, Mitchell, & Mourton, 1987). Researchers have also found that women attending college tend to display more mature CDM attitudes and skills than their male counterparts (Healy et al., 1987; Luzzo, 1991).

A more recently conceptualized career development construct, which is based on Bandura's (1977, 1982, 1986) self-efficacy theory, is the notion of career self-efficacy (Hackett & Betz, 1981). According to Bandura, an individual's judgements of self-efficacy influence whether behavior will be initiated, the degree of effort that will be expended, and the length of time that a behavior will be maintained in the face of obstacles. In the career development domain, self-efficacy expectations are hypothesized to influence an individual's attitudes and behaviors as they directly apply to the CDM process.

> If individuals lack expectations of personal efficacy in one or more career-related behavioral domains, behaviors critical to effective and satisfying choices, plans, and

> achievements, are less likely to be initiated and, even if initiated, less likely to be sustained when obstacles or negative experiences are encountered (Hackett & Betz, 1981, p. 329).

Career self-efficacy research has generally supported the predicted relationships between self-efficacy and adaptive career development (Brooks, 1990). One aspect of career self-efficacy that has received considerable attention in career development literature is Taylor and Betz's (1983) notion of career decision-making self-efficacy (CDMSE). Recent studies have consistently revealed that the CDMSE of college students is positively correlated with a variety of other measures of adaptive career functioning and development, such as career decidedness (Taylor & Betz, 1983), exploratory behavior (Blustein, 1989), vocational identity (Robbins, 1985), CDM attitudes and CDM skills (Luzzo, 1993c). Despite these findings, however, many career developmentalists (e.g., Brooks, 1990; Lent & Hackett, 1987) have emphasized the need for additional work to evaluate the potential of self-efficacy theory in explaining CDM behavior. Of particular interest is research designed to answer a critical question recently posed by Brooks (1990, p. 369): "Does self-efficacy theory add explanatory power to vocational behavior beyond established variables and models (interests and values; locus-of-control models and expectancy theory)?"

Results of research assessing the explanatory power of self-

efficacy offer tentative support for the idea that career self-efficacy augments variables such as ability and interests (Brooks, 1990). Nevertheless, determining self-efficacy's incremental contribution to career development remains a relatively unchartered territory. Lent, Brown, and Larkin (1987) addressed this issue in their comparative investigation of self-efficacy, interest congruence, and consequence thinking. They discovered that career self-efficacy was a more useful predictor of college students' range of perceived career options, grades, and academic persistence than Holland's (1985) model of person-environment congruence and Janis and Mann's (1977) decision-making model. More recently, Chartrand, Camp, and McFadden (1992) compared the relative contributions of self-efficacy, interest congruence, and student commitment of college undergraduates to the prediction of academic adjustment and career indecision. Results indicated that both career self-efficacy and commitment were significant predictors of academic adjustment. Only interest congruence, however, significantly predicted career indecision. Continuing research to assess the relative value of competing theoretical models is critical to increasing our understanding of the potential role that self-efficacy may play in career development theory (Betz & Hackett, 1986; Brooks, 1990; Lent et al., 1987; Lent & Hackett, 1987). As summarized by Chartrand et al. (1992), "Comparative research can shed light on the relative strengths of different theoretical

constructs and define relevant parameters for college populations" (p. 299).

One competing model that has increased our understanding of the career development of college students is Rotter's (1966) notion of locus of control. Research conducted over the past several years has consistently shown that an individual's locus of control is moderately correlated with assessments of career maturity (e.g., Bernardelli, DeStefano, & DuMont, 1983; Luzzo, 1993b; Taylor, 1982). Researchers have discovered that college students with an internal locus of control are more likely to possess attitudes and exhibit skills indicative of higher levels of career maturity than students with an external locus of control (Blustein, 1987; Gable, Thompson, & Glastein, 1976; Luzzo, 1993b; Taylor, 1982).

Locus of control has often been treated in the literature as analogous to self-efficacy (Bandura, 1977). Because of this common misconception, Bandura emphasized the need to differentiate between the two models.

> Rotter's (1966) conceptual scheme is primarily concerned with causal beliefs about action-outcome contingencies rather than with personal efficacy. Perceived self-efficacy and beliefs about the locus of causality must be distinguished, because convictions that outcomes are determined by one's own actions can have any number of effects on self-efficacy and behavior. (Bandura, 1977, p.

204)

Layton's (1984) investigation was the first to reveal that the self-efficacy model was superior to the locus of control model in explaining at least some aspects of career development. In particular, Layton discovered that women's range of perceived career options were better explained by self-efficacy expectations than by locus of control. The self-efficacy of the participants in Layton's investigation for traditionally female occupations was significantly higher than their self-efficacy for non-traditional occupations. Furthermore, self-efficacy for non-traditional fields predicted college major choices better than interests, ability, and a variety of other background variables were able to predict such choices. At the same time, however, Layton did not find any significant differences between the self-efficacy and locus of control models in predicting actual vocational exploration behaviors. As evaluated by Lent and Hackett (1987), the results of Layton's (1984) study "emphasize the need to investigate aspects of career development other than occupational or major choices in testing the career self-efficacy model" (p. 353).

In an effort to extend this line of research, Taylor and Popma (1990) compared the effectiveness of CDMSE, career salience, and locus of control as predictors of the vocational indecision of college students. As expected, CDMSE was moderately related to locus of control and career salience. More

significant, however, was the finding that of the competing models, only CDMSE significantly predicted vocational indecision. Despite these results, many questions regarding the value of the career self-efficacy model in career development remain. One question in particular that has not yet been addressed in the literature is whether career self-efficacy theory is more useful than the locus of control model in predicting the affective and cognitive components of career maturity.

The present study was designed to extend the efforts of Layton (1984) and Taylor and Popma (1990) by assessing the comparative predictive value of two competing constructs (self-efficacy and locus of control) that have been consistently associated with the career development and career maturity of college students. Specifically, the study was designed to assess the relative value of each theoretical model in predicting the cognitive (CDM skills) and affective (CDM attitudes) components of college students' career maturity.

Method

Participants

The sample in this study consisted of 113 (83 women and 30 men) undergraduates attending a small, liberal arts university in the Midwest. The ages of the participants ranged from 18-48 (M = 23.84, SD = 6.16). The majority of the participants (n = 101) were Caucasian. Other ethnic group representation included African Americans (n = 3), Asian Americans (n = 4), Hispanics (n

= 3), and Native Americans (n = 2). Career aspirations of the participants represented a wide variety of interest areas. All students participated in the investigation as part of an undergraduate psychology course exercise.

Procedure and Instruments

The participants completed measures of CDMSE, career locus of control, CDM attitudes, and CDM skills along with a demographic form (requesting age, gender, ethnic background, current occupation, and career aspiration). The measures were completed in a counterbalanced order to control for order effects. Data were collected in classrooms of 15-30 students.

Measure of CDMSE. The CDMSE scale (Taylor & Betz, 1983) was used to measure each subject's level of CDMSE. The CDMSE scale includes a list of 50 different CDM tasks. Respondents are asked to rate their confidence in their ability to complete each of the tasks on a scale of 0 (no confidence) to 9 (complete confidence). A total score is computed by summing the confidence values for all 50 items. The CDMSE scale has exhibited high internal consistency reliability and generally high item-total score correlations (Robbins, 1985; Taylor & Betz, 1983). A test-retest reliability coefficient of .83 for the scale has been reported (Luzzo, 1993a). Adequate support for the construct, content, and criterion validity of the measure has also been presented (Blustein, 1989; Taylor & Betz, 1983).

Measure of Career Locus of Control. Rotter (1975)

recommended the use of domain-specific locus of control scales for increasing the precision of the locus of control model. On the basis of Rotter's recommendation, the Career Locus of Control Scale (CLCS) (Trice et al., 1989) was selected for this investigation. The CLCS consists of 18 statements related to career planning (e.g., "Getting a good job is primarily a matter of being in the right place at the right time."). Respondents are asked to indicate whether each statement is true or false for them. Scores are calculated by totalling the number of external responses selected. In other words, higher scores on the CLCS represent a relatively external locus of control for career development, whereas lower scores indicate a relatively internal locus of control for career development. Trice et al. (1989) reported a test-retest reliability coefficient for the scale of .93. Kuder Richardson (KR) 20 reliability estimates for several college student samples have ranged from .81 to .89 (Trice et al., 1989). Validity of the CLCS has been supported by results of several recent studies showing that scores on the CLCS are positively correlated with a variety of adaptive career development behaviors, including job search and career exploration activities (Trice et al., 1989). Research has also revealed a moderate correlation between the CLCS and Rotter's (1966) global measure of locus of control, although a variety of investigations have revealed the CLCS to be a better predictor of career development attitudes and behaviors than Rotter's scale

(Trice et al., 1989).

Measure of CDM Attitudes. The Attitude Scale-Screening Form A-2 of Crites's (1978a) Career Maturity Inventory (CMI) was used to assess each subject's attitudes toward career decision making. The Attitude Scale (AS) consists of 50 true-false items representing attitudes about the CDM process. Higher scores indicate more mature CDM attitudes and greater readiness to make career choices (Savickas, 1990). KR 20 reliability coefficients for the AS range from .72 to .90, with test-retest reliability of .71 over a 1-year interval (Crites, 1978b). The AS is generally considered an adequately valid measure of CDM attitudes (Savickas, 1990) despite some psychometric concerns raised in the literature (Westbrook, 1982). The AS is one of the most popularly utilized career maturity measures (Savickas, 1984).

Measure of CDM Skills. The Decision Making (DM) scale of the Career Development Inventory (CDI) College and University Form (Super et al., 1981) was used to measure each subject's CDM skills. The DM scale assesses an individual's ability to apply decision-making principles and methods to solve educational and occupational problems. Respondents are asked to select the best response to 20 different hypothetical career dilemmas. Low scores on the DM scale indicate that individuals do not possess adequate knowledge of the principles and practices of decision making to make effective career decisions. High scores, on the other hand, indicate that individuals are ready to use the

occupational information they have acquired for career planning (Savickas, 1990). Alpha coefficients for college students range from .60 to .82 and test-retest reliability of r = .70 for college student samples is reported (Thompson & Lindeman, 1982). Scores on the DM scale relate moderately to a variety of other measures of CDM ability and knowledge (Jepsen & Prediger, 1981).

Data Analysis

First, a multivariate analysis of variance (MANOVA) was calculated to assess for gender differences across the measures. Pearson product-moment correlation coefficients were then computed to provide data regarding the relationships between all of the variables employed in the study. Next, the comparative utility of the self-efficacy and locus of control models for predicting CDM attitudes and skills was examined by stepwise multiple regression analyses that were run separately for each of the criterion variables. Stepwise multiple regression procedures were used because of the lack of any clearly logical hierarchical ordering of the variables and the exploratory nature of the study.

Results

Results of the MANOVA indicated the absence of significant gender differences among the variables, Pillais F = 1.749 (df = 102, p = .145). All subsequent analyses, therefore, were calculated across levels of gender.

The means and standard deviations for all variables and

intercorrelations are presented in Table 1. As shown in the

Insert Table 1 about here

table, career locus of control and CDM self-efficacy (CDMSE) are both significantly correlated with CDM attitudes and CDM skills. Age of participants is also significantly correlated with CDM attitudes and skills as well as with CDMSE.

Results from the regression analysis predicting CDM attitudes are shown in Table 2. The obtained R was .53,

Insert Table 2 about here

accounting for 26% of the variance in CDM attitudes. The strongest predictor of CDM attitudes was CDMSE, followed (in order) by CDM skills and locus of control. Age of participants did not enter the regression equation.

Table 3 presents the results from the regression analysis predicting CDM skills. As shown in the table, the obtained R for

Insert Table 3 about here

this regression analysis was .36. CDM attitudes, accounting for 12% of the variance in CDM skills, was the only variable that entered the regression equation.

Discussion

The results of this investigation provide evidence that Bandura's (1977, 1982, 1986) self-efficacy theory is a more powerful predictor of the CDM attitudes of college students than Rotter's (1966) locus of control model. Although CDM self-efficacy (CDMSE) and career locus of control are both significantly correlated with the CDM attitudes of college students, the results reveal that self-efficacy accounts for more of the variance in CDM attitudes than locus of control. Results also show that the most powerful predictor of CDM skills among college students is their CDM attitudes. Despite the fact that CDMSE and career locus of control are both significantly correlated with CDM skills, only CDM attitudes entered the regression equation for the prediction of CDM skills.

The discovery that CDMSE provides significantly more explanatory power than career locus of control as a predictor of the affective component of career maturity (i.e., CDM attitudes), coupled with the findings of previous studies (Layton, 1984; Taylor & Popma, 1990), suggests the superiority of self-efficacy theory over the locus of control model in explaining at least some aspects of college students' career development. At the same time, however, neither model appears to be of any significant value when attempting to explain the variance in the CDM skills of college students.

As revealed in an earlier study of CDMSE (Luzzo, 1993c) and

supported by this investigation, CDMSE (although significantly correlated with CDM skills) does not explain any additional variance in CDM skills after CDM attitudes are considered. Perhaps this is best explained by the fact that the CDMSE scale (Taylor & Betz, 1983) was based on the factors included in Crites's (1978a) Career Maturity Inventory-Attitude Scale, the measure of CDM attitudes in this study. The CDMSE scale may not capture the essential elements of career decision making that are incorporated in the Decision-Making scale of Super and colleagues' (Super et al., 1981) Career Development Inventory. It is certainly arguable that self-efficacy for attitudes toward career decision making may be conceptually different than self-efficacy for CDM skills. This possibility along with other plausible reasons for the observed results are worthy of additional empirical investigation. In our attempt to more comprehensively understand the value of the self-efficacy model in the career development domain, we also need to assess the relationship between CDM self-efficacy and career maturity by utilizing a variety of other career development instruments specifically designed to measure CDM attitudes and skills.

Although self-efficacy emerged as more powerful than locus of control as a predictor of CDM attitudes, it is important to note that locus of control accounted for additional variance in the CDM attitudes of the participants. After CDMSE and CDM skills entered the regression equation for the prediction of CDM

attitudes, career locus of control entered the equation, accounting for an additional 4% of the variance in CDM attitudes. This finding supports several prior investigations of college students' career development (e.g., Bernardelli et al., 1983; Gable et al., 1976; Luzzo, 1993b; Taylor, 1982). Students with an internal career locus of control tend to display more mature attitudes toward career decision making and exhibit greater skills at making career decisions than students with an external career locus of control.

The fact that age did not enter either of the regression equations despite its significant correlation with CDM attitudes and CDM skills is also noteworthy. Age has been traditionally viewed as a significant factor in the career development of college students. Although the results of this investigation continue to provide some limited support for this notion, it is clear that other variables, such as career self-efficacy and locus of control, are substantially more powerful predictors of college students' career maturity. This finding does not discount, however, the potential significance of age as an important moderator variable in the expression of career maturity among college populations.

Despite the limitations of this study, including the relatively small number of ethnic minority participants and the exclusive use of paper-and-pencil inventories, the results have clear theoretical and practical implications. Theoretically, the

findings support the argument that Bandura's (1977, 1982, 1986) self-efficacy theory is comparatively more valuable in predicting the CDM attitudes of college students than Rotter's (1966) locus of control model, although neither perspective appears to be substantially helpful in predicting CDM skills. The results also provide tentative evidence suggesting that career counselors might be successful at increasing the maturity of college students' attitudes toward career development by implementing techniques specifically designed to increase career self-efficacy expectations. Self-efficacy change strategies, however, such as those initially described by Bandura (1977), are in need of considerable empirical assessment before they can be fully implemented. Finally, researchers should continue to engage in comparative investigations that analyze the utility of competing theoretical constructs within the career domain. Such studies are sure to provide us with information of considerable theoretical and practical significance.

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Table 1

Intercorrelations Among Variables

Variables	1	2	3	4	5	M	SD
1. Age	---	-.169	.275**	.328***	.252**	23.84	6.16
2. Locus of Control[a]	---	-.176	-.343***	-.217*		5.58	2.33
3. CDM[b] Self-Efficacy		---	.390***	.236*		348.82	59.68
4. CDM Attitudes			---	.352***		35.97	4.62
5. CDM Skills				---		14.66	2.60

Note.

[a]Higher career locus of control scores indicate a more external locus of control for career development.

[b]CDM = Career Decision-Making

N = 115.

*p < .05.

**p < .01.

***p < .001.

Table 2

Results of Regression Analysis for the Prediction of Career Decision-Making (CDM) Attitudes

Predictor Variable	B	F (df = 1, 106)	R²	Adjusted R²
CDM Self-Efficacy	.42	4.735***	.53***	.26
CDM Skills	.27	3.120**		
Locus of Control	-.21	-2.398*		
Age	.17	1.981		

Note.

[a]For F values of R, df = 4, 106.

*p < .05.

**p < .01.

***p < .001.

Table 3

Results of Regression Analysis for the Prediction of Career Decision-Making (CDM) Skills

Predictor	B	F (df = 1, 106)	R^a	Adjusted R^2
CDM Attitudes	.36	3.982*	.36*	.12
Age	.14	1.467		
CDM Self-Efficacy	.12	1.209		
Locus of Control	-.11	-1.152		

Note.

[a]For F values of R, df = 4, 106.

*p < .001